

REMARKS/ARGUMENTS

Responsive to the objection set forth in paragraph 1 of the Office Action, and rejection of claims 1, 3-7, 9 and 11-13 as set forth in paragraphs 2 and 3 of the Office Action, the Examiner is directed to page 17, lines 3-10, where it is stated that semiconductor die meeting the claims, namely those including less than 1000 Å thick radiation hardened gate oxide were found in compliance with the "Test Procedures for the Measurement of Single-Event Effects in Semiconductor Devices from Heavy Ion Irradiation EIA/JESD". The test procedure is explained at lines 11-25.

Also, it should be noted that a device according to the claims was qualified to withstand total dose radiation as well. See specification at page 16, lines 6 to page 17, line 2. It is respectfully submitted, therefore, that the amendment to claim 1 is not new matter but fully supported by the specification. Withdrawal of the objection and reconsideration of the rejected claims are requested.

Claims 1, 3-7, 9 and 11-13 have been rejected under 35 U.S.C. §103(a) as obvious over Williams, U.S. Patent No. 5,248,627, in view of Kalnitsky, U.S. Patent No. 5,418,174, and in further view of Wolf et al. It has been set forth in the Office Action that Williams teaches all of the limitations of claim 1 including a gate oxide that is less than 1000 Å thick except that Williams does not teach a radiation hardened gate oxide. However, it has been set forth that because Kalnitsky teaches semiconductor devices with a radiation hardened gate oxide it would have been obvious to modify the device shown by Williams to obtain a device according to claim 1. Reconsideration is requested.

Claim 1 calls for, in combination with other limitations, a MOSgated device which includes a radiation hardened gate oxide layer that is less than 1000 Å thick and is "capable of complying with the test procedures for the measurement of single-event effects in semiconductor devices from heavy ion irradiation."

Neither Williams nor Kalnitsky specifically teach a MOSgated device having a radiation hardened gate oxide that is less than 1000 Å thick which can comply with test procedures that can establish the device capable of withstanding Single-Event Effects (SEE). Furthermore, a device having a radiation hardened gate oxide that is less than 1000 Å thick which is capable of

withstanding SEE as set forth in claim 1 is not suggested by the art of record or the art of radiation hardened devices at the time of the invention. Specifically, as detailed in the specification, it was generally understood that to obtain sufficient resistance to damage due to SEE the gate oxide must be made at least thicker than 1300 Å. See specification at page 2, line 22, page 3, line 4. However, as demonstrated by the data in the application, (see specification at page 17, line 3 to page 18, line 3; see also Figure 14) a device according to claim 1 is capable of withstanding damage due to SEE, despite having a thinner than 1300 Å gate oxide. Such a surprising result is not taught in the cited art, nor was it expected by the knowledge within the art at the time of the invention. It is respectfully submitted that the combination of teachings of Williams and Kalnitsky does not make the subject matter of claim 1 obvious. Reconsideration of claim 1, is, therefore, requested.

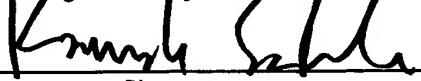
Claims 2-7, 9 and 11-13 depend from claim 1, and, therefore, include at least its limitations. Each of these claims includes other limitations which in combination with those of claim 1, are not shown or suggested by the art of record. Reconsideration is requested.

The application is believed to be in condition for allowance. Such action is earnestly solicited.

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Name of applicant, assignee or
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Signature

November 4, 2003

Date of Signature

Respectfully submitted,



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